

EXHIBIT 14
REDACTED VERSION OF DOCUMENT
SOUGHT TO BE SEALED

SUBJECT TO PROTECTIVE ORDER
CONTAINS HIGHLY CONFIDENTIAL—OUTSIDE ATTORNEYS' EYES ONLY—SOURCE CODE INFORMATION;
QUALCOMM CONFIDENTIAL BUSINESS INFORMATION – OUTSIDE ATTORNEYS' EYES ONLY – CONFIDENTIAL SOURCE CODE

**REPORT OF PAUL PRUCNAL, PH.D.
REGARDING INFRINGEMENT OF**

U.S. PATENT NO. RE44,105

U.S. PATENT NO. 8,509,350

U.S. PATENT NO. 9,113,419

Huawei Techs Co., Ltd. v. Samsung Elecs. Co., Ltd.,

Case No. 3:16-cv-02787-WHO (N.D. Cal.)

April 27, 2018

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I, Paul Prucnal, Ph. D., declare as follows:

1. I have been retained by Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung”) to serve as an expert in this case. I expect to testify at trial regarding the matters set forth in this report, if asked about those matters by the Judge or the parties’ attorneys.

2. I am being compensated at my usual hourly rate of \$650. I am being separately reimbursed for any out-of-pocket expenses. My opinions are my own, and my compensation does not depend in any way on the outcome of this litigation or the particular testimony or opinions that I express.

I. SUMMARY AND SCOPE OF OPINIONS

A. Overview

3. I have formed various opinions regarding U.S. Patent No. RE44,105 (“the ’105 patent”), Exhibit A¹, U.S. Patent No. 8,509,350 (“the ’350 patent”), Exhibit B, and U.S. Patent No. 9,113,419 (“the ’419 patent”), Exhibit C (collectively, “the Asserted Patents”). It is my understanding that Samsung has alleged infringement of the Asserted Patents by Huawei Technologies Co., Ltd., Huawei Devices USA, Inc., Huawei Technologies USA, Inc., and HiSilicon Technologies Co., Ltd. (collectively, “Huawei”).

4. It is my opinion that claims 28, 29, and 30 of the ’105 patent, claims 1 and 3 of the ’350 patent, and claim 1 of the ’419 patent (collectively, “the Asserted Claims”) are infringed directly and indirectly, literally and under the doctrine of equivalents, by the following accused

¹ Although some of the materials cited herein are referred to as exhibits, they are not attached as physical copies to my report. I have nevertheless reviewed and relied on true and correct copies of these materials provided to me by counsel and refer to them as exhibits for citation purposes herein.

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products: Mate 9, Honor 6X, Honor 8, Nexus 6P, Raven LTE, Pronto LTE, SnapTo, Y536-A1, Fusion 3, Tribute, Ascend Mate2 4G, Honor 5X, P8 Lite/Youth, Sensa, RIO, GX8, G8, G7 Plus, Ascend XT, Union, and Vitria (collectively “Accused Instrumentalities”). I understand these are the accused products listed in Samsung’s Amended Case Narrowing Statement, dated April 2, 2018, Exhibit D. Therefore, I have focused my analysis on these products. However, my analysis may also apply to additional Huawei or HiSilicon products.

5. It is my opinion that the Asserted Claims are practiced, directly, literally and under the doctrine of equivalents, by at least the following Samsung products: SM-G550T; SM-G550T1; SM-G890A; SM-G920A; SM-G920T; SM-G925A; SM-G925T; SM-G928A; SM-G928T; SM-J120A; SM-J320A; SM-J320AZ; SM-J321AZ; SM-J700T; SM-J700T1; SM-N920A; SM-N920T; SM-S550T; SM-S550TL; SM-T377A; SM-T377T; SM-T377V; SM-T677A; SM-T677V; SM-T817A; SM-T817P; SM-T817R; SM-T817R4; SM-T817T; and SM-T817V (collectively “Samsung Practicing Products”).

6. It is my opinion that Samsung made substantial contributions to the LTE standard and the Asserted Claims, as found in the LTE standard, substantially improved the LTE standard.

7. Huawei has not alleged any “non-infringing alternatives,” and I am not aware of any viable alternatives to the Asserted Claims.

8. It is my opinion that the Asserted Claims, as found in the Accused Instrumentalities, provide substantial benefits to Huawei’s customers.

9. It is my opinion that secondary considerations support non-obviousness of the Asserted Claims.

II. BACKGROUND/EXPERIENCE

10. My qualifications and publications are set forth in my Curriculum Vitae, which is attached as Exhibit E. Exhibit E is incorporated into my report in full.

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Category	Value (Percentage)
1	75%
2	85%
3	90%
4	95%
5	100%

[REDACTED]

[REDACTED]

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3. **Claim [1C]: “determining a cell-specific ratio (ρ_B/ρ_A) of a first ratio of traffic data to pilot (T2P) for first OFDM symbols (denoted as ρ_B) to a second ratio of T2P for second OFDM symbols (denoted as ρ_A), based on the cell-specific parameter and a number of cell-specific antenna ports configured in the base station.”**

557. All of the Accused Instrumentalities performs “determining a cell-specific ratio (ρ_B/ρ_A) of a first ratio of traffic data to pilot (T2P) for first OFDM symbols (denoted as ρ_B) to a second ratio of T2P for second OFDM symbols (denoted as ρ_A), based on the cell-specific parameter and a number of cell-specific antenna ports configured in the base station,” as recited by claim [1C].

(a) **3GPP Standards Evidence**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

559. In particular, subsection 5.2 of the TS 36.213 specifies that the cell-specific ratio ρ_B/ρ_A is determined by the cell-specific parameter, such as P_B , signaled by higher layers and the number of configured eNodeB cell specific antenna ports according to Table 5.2-1:

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QUALCOMM CONFIDENTIAL BUSINESS INFORMATION – OUTSIDE ATTORNEYS' EYES ONLY – CONFIDENTIAL SOURCE CODE**Table 5.2-1: The cell-specific ratio ρ_B / ρ_A for 1, 2, or 4 cell specific antenna ports**

P_B	ρ_B / ρ_A	
	One Antenna Port	Two and Four Antenna Ports
0	1	5/4
1	4/5	1
2	3/5	3/4
3	2/5	1/2

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] **414**

[REDACTED]	414	
	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

414	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[illegible]

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[REDACTED]

[REDACTED]

568. Accordingly, [REDACTED]

[REDACTED] Accused Instrumentalities each performs determining a cell-specific ratio (ρ_B/ρ_A) of a first ratio of traffic data to pilot (T2P) for first OFDM symbols (denoted as ρ_B) to a second ratio of T2P for second OFDM symbols (denoted as ρ_A), based on the cell-specific parameter and a number of cell-specific antenna ports configured in the base station, and therefore the HiSilicon-Based Accused Instrumentalities literally infringe claim [1C].

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

B. The Accused Instrumentalities Infringe Claim 3 of the '350 Patent

571. Based on my review of the 3GPP specifications and documents, source code and other information from Huawei, HiSilicon, Qualcomm, and other third parties, it is my opinion that each of the Accused Instrumentalities infringe every limitation of claim 3 of the '350 patent. My conclusion is based upon the sections above and my review of Samsung's infringement contentions for the '350 patent.

1. **Claim 3: "The method of claim 1, wherein a downlink reference symbol Energy Per Resource Element (EPRE) used by the wireless terminal is constant across a downlink system bandwidth and is constant across all subframes until different Reference Signal (RS) power information is received."**

572. All of the Accused Instrumentalities performs power control "wherein a downlink reference symbol Energy Per Resource Element (EPRE) used by the wireless terminal is constant across a downlink system bandwidth and is constant across all subframes until different Reference Signal (RS) power information is received," as recited in claim 3.

(a) 3GPP Standards Evidence

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

B. The '350 and '419 Patents

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

XVII. NO NON-INFRINGEMENT ALTERNATIVES

706. To date, Huawei has not identified any design-arounds or non-infringing alternatives. Therefore, Huawei has not alleged any “non-infringing alternatives,” and I am not aware of any viable alternatives to the Asserted Claims. To the extent Huawei or its experts is


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my analysis in light of any critiques or comments on my report and to offer additional opinions and evidence in reply to any opinions advanced by or on behalf of Huawei.

733. I may amend or supplement this report as necessary based on such additional information, or to address any new claim constructions offered by Huawei, Samsung, or provided by the Court.

I certify under penalty of perjury that the foregoing is true and correct.

Date: April 27, 2018


Paul Prucnal, Ph.D.